

What is claimed:

1. A method for removing particles on semiconductor wafers, comprising the step of performing a first cleaning process in which semiconductor wafers are cleaned for a prescribed time by immersing them in a first cleaning solution comprising ultra-pure water containing a prescribed gas in a range 20% to 50% of the saturated concentration in a first cleaning tank, and in which ultrasonic waves are supplied to said first cleaning solution in said first process.
2. A method for removing particles on semiconductor wafers as described in claim 1 in which said prescribed gas is hydrogen.
3. A method for removing particles on semiconductor wafers as described in claim 2 in which the in-solution concentration of the hydrogen in said first cleaning solution is in the range 0.3 ppm to 0.8 ppm.
4. A method for removing particles on semiconductor wafers as described in claim 2 in which said first cleaning solution contains ammonia in an in-solution concentration in the range 1 ppm to 10 ppm.
5. A method for removing particles on semiconductor wafers as described in claim 2, further comprising the step of, before said first cleaning process, performing a second cleaning process in which the semiconductor wafers are cleaned for a prescribed time by immersing them in a second cleaning solution consisting of ultra-pure water containing a prescribed quantity of ozone in a second cleaning tank.
6. A method for removing particles on semiconductor wafers as described in claim 5 further comprising the step of, after said second cleaning process, performing a third cleaning process in which said semiconductor wafers are cleaned for a prescribed time by immersing them in a third cleaning solution consisting of HF mixed solution in a third cleaning tank.

7. A device for removing particles on semiconductor wafers, comprising:

a first cleaning tank filled with ultra-pure water containing hydrogen in a range 20% to 50% of a saturated concentration;

an ultrasonic wave supply means for supplying ultrasonic waves to said first cleaning solution in said first cleaning tank;

a conveyance means that conveys semiconductor wafers into said first cleaning tank; and

a control means that controls said conveyance means so as to immerse the semiconductor wafers in said first cleaning solution in said first cleaning tank, and after a prescribed time remove said semiconductor wafers from said first cleaning solution.